

## Abstract P3

### Cross Sectional Study on Current Usage of Nuclear Medicine Based Myocardial Perfusion Scan in Young Adults for Detection and Evaluation of Coronary Artery Disease

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**Objectives:** Coronary artery disease (CAD) is rising among our population including young adults. Myocardial perfusion scan (MPS) may provide information needed to detect, evaluate and risk stratify CAD. However, locally data is limited regarding the use of this technique among young adults. Our objectives were to determine clinical characteristics of adults aged  $\leq 40$  years-old who underwent MPS for CAD detection or risk stratification and the association with scan findings.

**Methods:** Cross-sectional review of all young adults (n=57) who underwent pharmacological stress testing followed by MPS imaging studies at our department between January 2021 and June 2023. They received approximately 15 millicurie of 99m Technetium-tetrofosmin radiotracer injection for MPS. Well-preserved myocardial perfusion, polar map and ejection fraction (EF)  $\geq 50\%$  constituted normal MPS. Clinical information and scan findings were analysed.

**Results:** Average age was 35.6 (22-40) years, with males (n=28, 49.1%) and females (n=29, 50.8%). Although 17.5% had 3-4 cardiovascular risks, most patients reported single risk (45.6%) or 2 risk factors (36.8%). 61.4% had chest pain or angina and 22.8% had reduced effort tolerance or failure symptoms. Almost half of them had unremarkable baseline ECG (49.1%). Majority were referred for CAD detection (93%) while only 4 patients with known ischaemic disease were referred for risk stratification. MPS showed abnormal perfusion in 50.9% consisting myocardial ischemia (n=20), infarction (n=3) and indeterminate findings (n=6). Majority had EF $>50\%$  on MPS (n=49). Among risk stratification cases, most demonstrated abnormal MPS (n=3, 75%). Overall, significant association noted between patients with  $\geq 2$  cardiovascular risks and abnormal perfusion defect (p $<0.05$ ). Gender, chest pain, failure symptom and abnormal baseline ECG showed no significant association with abnormal MPS.

**Conclusion:** Young adults with  $\geq 2$  cardiovascular risks were significantly associated with abnormal MPS. Attention should be given during scan interpretation and reporting for this cohort of patients.

Keywords: Coronary artery disease, myocardial perfusion scan

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